Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

August 15, 2016

Ms. Dianna Maddocks, Director
Global Asset Management
Digital Realty
451 D Street, Suite 912
Boston, MA 02212

RE: NEEDHAM – Metropolitan Boston/Northeast Region
Transmittal No.: X253673
Application No.: NE-13-002
Class: *SM80-7*
FMF No.: 394419
PLAN APPROVAL AND CONSOLIDATION

Dear Ms. Maddocks:

The Massachusetts Department of Environmental Protection (MassDEP), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed installation and operation of eight 2,000 ekW diesel-fueled emergency generators and one 500 ekW diesel-fueled emergency generator at a multi-tenant data center located at 105 Cabot Street in Needham, Massachusetts ("Facility"). The Application bears the seal and signature of Kevin Drinan, Massachusetts Registered Professional Engineer Number 34354.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 Air Pollution Control regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator (Permittee) must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Digital Realty Trust submitted a Non-major Comprehensive Plan Approval (CPA) Application (Transmittal #X253673) for the installation of up to eight new 2,000 ekW diesel-fuel fired emergency generators and one 500 ekW diesel-fuel fired emergency generator at 105 Cabot Street in Needham, Massachusetts. The Facility is a multi-tenant data center consisting of two buildings, one existing building with an existing Comprehensive Plan Approval located at 128 First Avenue and a second new building constructed on an adjacent, contiguous lot located at 105 Cabot Street. The buildings are owned and operated by Digital 128 First Avenue, LLC, and Digital 105 Cabot Street, LLC, respectively, each doing business as Digital Realty Trust (Permittee). Digital Realty rents space to tenants and houses computer servers and related equipment that need an uninterruptable electric power supply requiring the use of diesel-fueled standby emergency generators.

This Plan Approval, Tr. No. X253673, includes the consolidated emission limitations and requirements from Plan Approval, Tr. No. W009813, issued to the Level 3 Communications on August 31, 2000 for the 128 First Avenue building. Each engine/generator set shall only be operated during bona fide emergencies in accordance with 310 CMR 7.02 and for routine maintenance and testing periods (during the daytime only). In order to maintain the Facility below major source thresholds based on NOx emissions, the Permittee shall limit the facility-wide fuel usage to no more than 413,220 gallons per 12-month rolling period (*i.e.,* 241,050 gallons per 12-month rolling period at 128 First Ave. and 172,170 gallons per 12-month rolling period at 105 Cabot St.). For a total of 23 units, this equates to an average of 150 operating hours for each individual unit per 12-month rolling period.

The 15 existing 2,000 ekW emergency generator units (1GenA thru 1GenO) at 128 First Avenue, are grouped in sets of three generators (each a “generator plant”). The actual maximum electric power output that can be provided to the building by all 15 emergency generators is 20,000 ekW. Since each group of three emergency generator units is connected to a paralleling switchboard, all three units share the load equally during a power outage, (at a maximum load per generator of 67%). The products of combustion from each engine shall be emitted through its own vertical steel stack. The height of each stack exit shall be 75 feet above ground level, 27 feet above the building roof. Each engine exhaust system shall be equipped with a "critical" grade muffler for noise suppression. The exhaust gases shall exit vertically, and shall not be impeded by any rain protection device. Existing Units 1GenA thru 1GenH shall be modified with the installation of Rypos diesel particulate filters to reduce emissions of particulate matter by approximately 85 percent, carbon monoxide and volatile organic compounds by approximately 70 percent.

At the 105 Cabot Street building**,** the proposed 2,000 ekW units (2Gen1 thru 2Gen8) will provide standby emergency power to tenant suites during utility grid power interruptions and the proposed 500 ekW unit (2Gen9) will provide emergency power for the building systems. The products of combustion from each of 2Gen1 thru 2Gen8 will be emitted through its own

vertical steel stack. The height of each stack exit will be 76 feet above ground level, 11 feet above the building roof. 2Gen9 will be located on the ground at the southwest corner of the parking lot. The height of the 2Gen9 stack will be 20.6 feet above the ground, 10.6 feet above the generator enclosure. Each engine (2Gen1through 2Gen8) exhaust system shall be equipped with a "super hospital" grade muffler for noise suppression. The exhaust gases for all units at 105 Cabot St. shall exit vertically, and shall not be impeded by any rain protection device.

Applicable Regulatory Requirements

The Permittee has indicated that the new emergency generator units 2Gen1 through 2Gen9, as well as seven (7) of the existing emergency generator units, 1GenI through 1GenO, are subject to New Source Performance Standards (NSPS) under 40 CFR 60 Subpart IIII– Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. 40 CFR 60 Subpart IIII requires emergency generator engines to meet the non-road engine emission standards identified in 40 CFR 89.112 and 89.113, as well as other compliance and record keeping requirements set forth at 40 CFR §60.4211(a) through (g) and 40 CFR §60.4214(b). The Permittee has also indicated that eight (8) of the existing emergency generator units, 1GenA through 1GenH, are not subject to NSPS Subpart IIII, because they were constructed prior to July 11, 2005.

The Permittee has further indicated that the new emergency generator units 2Gen1 through 2Gen9, as well as six (6) of the existing emergency generator units, 1GenJ through 1GenO, are subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) under 40 CFR 63 Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. However, for new stationary emergency engines at area sources of HAP emissions that began construction or reconstruction after June 12, 2006, the NESHAP requirements are satisfied if the engines comply with the NSPS requirements under 40 CFR 60 Subpart IIII. Finally, the Permittee has indicated that nine (9) of the existing emergency generator units, 1GenA through 1GenI, are not subject to 40 CFR 63 Subpart ZZZZ, because they qualify as existing emergency engines constructed prior to June 12, 2006, and because they meet all the exemption requirements set forth under 40 CFR §63.6585(f)(2).

Since MassDEP has not accepted delegation for 40 CFR 60 Subpart IIII or 40 CFR 63 Subpart ZZZZ for sources which are not subject to 310 CMR Appendix C, the Permittee is advised to consult with EPA Region 1 at 5 Post Office Square, Suite 100, Boston, MA 02109-3912, telephone: (617) 918-1111. Other applicable requirements may include notification, record keeping, and reporting requirements.

2. EMISSION UNIT IDENTIFICATION

Each Emission Unit ("EU") identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1

EU	Description	Design Capacity (Btu/hr)	Pollution Control Device (PCD)
1GenA [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	20,230,000	Rypos ADPF-7 Active Diesel Particulate Filter
1GenB [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	20,230,000	Rypos ADPF-7 Active Diesel Particulate Filter
1GenC [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	20,230,000	Rypos ADPF-7 Active Diesel Particulate Filter
1GenD [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	20,230,000	Rypos ADPF-7 Active Diesel Particulate Filter
1GenE [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	20,230,000	Rypos ADPF-7 Active Diesel Particulate Filter
1GenF [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	20,230,000	Rypos ADPF-7 Active Diesel Particulate Filter
1GenG [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	20,230,000	Rypos ADPF-7 Active Diesel Particulate Filter
1GenH [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	20,230,000	Rypos ADPF-7 Active Diesel Particulate Filter
1GenI [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	18,900,000	N/A
1GenJ [1]	128 First Ave.- Caterpillar Model 3516B, 2,000 ekW	19,200,410	N/A
1GenK [1]	128 First Ave.- Caterpillar Model 3516C, 2,000 ekW	19,200,410	N/A
1GenL [1]	128 First Ave.- Caterpillar Model 3516C, 2,000 ekW	19,200,410	N/A
1GenM [1]	128 First Ave.- Caterpillar Model 3516C, 2,000 ekW	19,200,410	N/A
1GenN [1]	128 First Ave.- Caterpillar Model 3516C, 2,000 ekW	19,200,410	N/A

Table 1			
EU	**Description**	**Design Capacity (Btu/hr)**	**Pollution Control Device (PCD)**
1GenO [1]	128 First Ave.- Caterpillar Model 3516C, 2,000 ekW	19,200,410	N/A
2Gen1	105 Cabot St.- Caterpillar Model 3516C, 2,000 ekW	19,325,630	N/A
2Gen2	105 Cabot St.- Caterpillar Model 3516C, 2,000 ekW	19,325,630	N/A
2Gen3	105 Cabot St.- Caterpillar Model 3516C, 2,000 ekW	19,325,630	N/A
2Gen4	105 Cabot St.- Caterpillar Model 3516C, 2,000 ekW	19,325,630	N/A
2Gen5	105 Cabot St.- Caterpillar Model 3516C, 2,000 ekW	19,325,630	N/A
2Gen6	105 Cabot St.- Caterpillar Model 3516C, 2,000 ekW	19,325,630	N/A
2Gen7	105 Cabot St.- Caterpillar Model 3516C, 2,000 ekW	19,325,630	N/A
2Gen8	105 Cabot St.- Caterpillar Model 3516C, 2,000 ekW	19,325,630	N/A
2Gen9	105 Cabot St.- Caterpillar Model C15, 500 ekW	5,092,280	N/A

Table 1 Key:

EU = Emission Unit Number
PCD = Pollution Control Device
Btu/hr = British thermal units per hour

Table 1 Notes:

1. existing emission units

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2

Generator Plant Configuration (EUs)	Operational / Production Limit	Air Contaminant	Emission Limit (per generator plant)	
			TPM	TPY
1GenA through 1GenC with DPF	Collectively 720 hours per month and 900 hours per rolling 12-month period for these two Generator Plants Operating Load $\leq$ 75 percent per EU	NOx	4.689	5.861
		CO	0.092	0.115
1GenD through 1GenF with DPF		VOC	0.069	0.086
		$PM/PM_{10}/PM_{2.5}$	0.014	0.017
		SO_2	0.005	0.006
1GenG through 1GenH with DPF	Collectively 360 hours per month and 450 hours per rolling 12-month period Operating Load $\leq$ 75 percent per EU	NOx	4.954	6.193
		CO	0.095	0.119
1GenI		VOC	0.090	0.112
		$PM/PM_{10}/PM_{2.5}$	0.030	0.038
		SO_2	0.005	0.006
1GenJ through 1GenO	Collectively 720 hours per month and 900 hours per rolling 12-month period for these two Generator Plants Operating Load $\leq$ 75 percent per EU	NOx	3.381	4.226
		CO	0.187	0.234
		VOC	0.153	0.191
		$PM/PM_{10}/PM_{2.5}$	0.029	0.036
		SO_2	0.005	0.006
2Gen1 through 2Gen8	Collectively 960 hours per month and 1,200 hours per rolling 12-month period	NOx	16.74	20.93
		CO	0.917	1.146
		VOC	0.331	0.414
		$PM/PM_{10}/PM_{2.5}$	0.082	0.102
		SO_2	0.017	0.021

Table 2				
Generator Plant Configuration (EUs)	**Operational / Production Limit**	**Air Contaminant**	**Emission Limit (per generator plant)**	
			TPM	**TPY**
2Gen9	120 hours per month and 150 hours per rolling 12-month period	NOx	0.578	0.722
		CO	0.040	0.050
		VOC	0.001	0.001
		$PM/PM_{10}/PM_{2.5}$	0.002	0.002
		SO_2	0.001	0.001
Facility-Wide	Facility-Wide fuel usage limited to no more than 413,220 gallons per 12-month rolling period	NOx	38.6	48.2 [1]
		CO	1.61	2.01
		VOC	0.86	1.08
		$PM/PM_{10}/PM_{2.5}$	0.20	0.25
		SO_2	0.04	0.05
		Single HAP	4.0	5.0
		Total HAP	12.0	15.0

Table 2 Key:

EU = Emission Unit Number
CO = Carbon Monoxide
NO_x = Nitrogen Oxides
PM = Total Particulate Matter
$PM_{2.5}$ = Particulate Matter less than or equal to 2.5 microns in diameter
PM_{10} = Particulate Matter less than or equal to 10 microns in diameter
HAP (single) = maximum single Hazardous Air Pollutant
HAP (total) = total Hazardous Air Pollutants
TPY = tons per consecutive12-month period
TPM = tons per month
VOC = Volatile Organic Compounds
SO_2 = Sulfur Dioxide
DPF = Diesel Particulate Filter

Table 2 Notes:

1. The maximum NOx emissions from facility boilers will be 1.9 tons per rolling 12-month period, and shall be included in the Facility-Wide NOx emission limit of 48.20 tons per rolling 12-month period.

Table 2A		
Emission Limitations – EU 1GenA to EU 1GenH [1]		
Pollutant	**Grams per brake horsepower-hour (each unit)**	**Pounds per hour (each unit)**
NO_x	5.51	26.05
CO	0.11	0.51
VOC	0.081	0.38
PM	0.016	0.077
SO_2 [6]	0.006	0.026
Emission Limitations – EU 1GenI [2]		
NO_x	6.44	30.47
CO	0.12	0.56
VOC	0.15	0.73
PM	0.076	0.36
SO_2 [6]	0.006	0.026
Emission Limitations – EU 1GenJ to EU 1GenO [3]		
NO_x	3.85	18.76
CO	0.21	1.04
VOC	0.17	0.85
PM	0.033	0.16
SO_2 [6]	0.006	0.027
Emission Limitations – EU 2Gen1 to EU 2Gen8 [4]		
NO_x	5.39	34.89
CO	0.29	1.91
VOC	0.11	0.69
PM	0.026	0.17
SO_2 [6]	0.006	0.036
Emission Limitations – EU 2Gen9 [5]		
NO_x	5.66	9.50
CO	0.40	0.67
VOC	0.006	0.01
PM	0.018	0.03
SO_2 [6]	0.006	0.009

Table 2A Key:

EU = Emission Unit Number
CO = Carbon Monoxide
NO_x = Nitrogen Oxides
PM = Total Particulate Matter
$PM_{2.5}$ = Particulate Matter less than or equal to 2.5 microns in diameter
PM_{10} = Particulate Matter less than or equal to 10 microns in diameter
SO_2 = Sulfur Dioxide

Table 2A Notes:

1. EU 1GenA through EU 1GenH are equipped with active particulate filters. Grams per brake horsepower-hour and pounds per hour limits for NOx, CO, VOC, and PM from EU 1GenA through EU 1GenH are based on the manufacturer "nominal data" emission guarantees at 75 percent load, after applying diesel particulate filter (DPF) control rates of 70% for CO, 70% for VOC, and 85% for PM.

2. Grams per brake horsepower-hour and pounds per hour limits for NOx, CO, VOC, and PM from EU 1GenI are based on the manufacturer "nominal data" emission guarantees at 75 percent load. EU 1GenI was installed in January 2006, but manufactured in November 2000, and is certified to meet EPA Tier 1 emission limits as required under NSPS Subpart IIII for pre-2006 model year engines.

3. Grams per brake horsepower-hour and pounds per hour limits for NOx, CO, VOC, and PM from EU 1GenJ through EU 1GenO are based on the manufacturer "nominal data" emission guarantees at 75 percent load. EU 1GenJ through EU 1GenO are certified to meet EPA Tier 2 emission limits as required under NSPS Subpart IIII.

4. Grams per brake horsepower-hour and pounds per hour limits for NOx, CO, VOC, and PM from EU 2Gen1 through EU 2Gen8 are based on the manufacturer "nominal data" emission guarantees at 100 percent load. EU 2Gen1 through EU 2Gen8 are certified to meet EPA Tier 2 emission limits as required under NSPS Subpart IIII.

5. Grams per brake horsepower-hour and pounds per hour limits for NOx, CO, VOC, and PM from EU 2Gen9 are based on the manufacturer "nominal data" emission guarantees at 100 percent load. EU 2Gen9 is certified to meet EPA Tier 2 emission limits as required under NSPS Subpart IIII.

6. SO2 grams per brake horsepower-hour and pounds per hour limits for all EUs are based on the AP-42 emission factor in Table 3.4-1 for diesel fuel with sulfur content of 0.0015 percent by weight.

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

Table 3	
EU	**Monitoring and Testing Requirements**
Facility -wide	1. The Permittee shall monitor the operating load for each emission unit.
	2. The Permittee shall monitor the operating hours for each emission unit and generator plant.
	3. The Permittee shall monitor fuel oil (ULSD) purchases such that only fuel oil containing no greater than 0.0015 percent by weight sulfur is purchased for use in each unit.
	4. The Permittee shall monitor the gallons of fuel oil (ULSD) combusted in each emission unit and generator plant.
	5. The Permittee shall monitor the operating parameters of engine/generator set (EU) and and PCD (if applicable) to ensure that each EU and PCD are functioning in accordance with the manufacturer's specifications and emission limits.
	6. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	7. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13.
	8. At least 30 days prior to emission testing, the Permittee shall submit to MassDEP for approval a stack emission pretest protocol.
	9. Within 45 days after emission testing, the Permittee shall submit to MassDEP a final stack emission test results report.

Table 3 Key:

EU = Emission Unit Number
PCD = Pollution Control Device
ULSD = Ultra Low Sulfur Distillate

Table 4	
EU	**Record Keeping Requirements**
Facility -wide	1. The Permittee shall record the operating load for each emission unit.
	2. The Permittee shall record the operating hours for each emission unit and generator plant.
	3. The Permittee shall maintain adequate records on-site to demonstrate that fuel oil (ULSD) containing no greater than 0.0015 percent by weight sulfur is purchased.
	4. The Permittee shall record the gallons of fuel oil (ULSD) combusted in each emission unit and generator plant.

Table 4	
EU	**Record Keeping Requirements**
Facility -wide	5. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping.
	6. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	7. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and the PCD(s) approved herein on-site.
	8. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	9. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and PCD(s). At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	10. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	11. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	12. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:

EU = Emission Unit Number
SOMP = Standard Operating and Maintenance Procedure
ULSD = Ultra Low Sulfur Distillate
PCD = Pollution Control Device
USEPA = United States Environmental Protection Agency

Table 5	
EU	**Reporting Requirements**
Facility -wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Northeast Regional Office of MassDEP, BWP Permit Chief by telephone: 978-694-3200, email: nero.air@massmail.state.ma.us, or fax : 978-694-3499, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 and/or 2A requirements. A written report shall be submitted to the Permit Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report every three years to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.

Table 5 Key:

EU = Emission Unit Number

4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU	**Special Terms and Conditions**
Facility -wide	1. This Plan Approval, Tr. No. X253673, includes the consolidated emission limitations and requirements from Plan Approval, Tr. No. W009813, issued to the Level 3 Communications on August 31, 2000 for the 128 First Avenue facility, and all plan application materials submitted as part of the Plan Approval Tr. No. MBR-00-COM-028 become part of this Plan Approval, Tr. No. X253673

Table 6

EU	Special Terms and Conditions
Facility -wide	2. The engine/generator sets shall be operated only during bona fide emergencies and for routine test/maintenance periods. • EU 1GenA through EU 1GenH, collectively, shall not operate more than 1,200 hours per 12 month rolling period; • EU 1GenI shall not operate more than 150 hours per 12 month rolling period; • EU 1GenJ through EU 1GenO, collectively, shall not operate more than 900 hours per 12 month rolling period; • EU 2Gen1 through EU 2Gen8, collectively, shall not operate more than 1,200 hours per 12 month rolling period; and • EU 2Gen9 shall not operate more than 150 hours per 12 month rolling period. Routine operation for each unit currently consists of exercising each unit for maintenance and testing only once per month for up to an hour, load testing at 1,800 ekW once per quarter for approximately one hour, and an annual black-out test conducted for approximately four hours. The testing is to be performed during the daytime. The following testing is typical: • *No load testing* (approx. 15-30 minutes at 10% load) one per month per engine for eight months of a year • *Load Bank Testing* (approx. 30 minutes at 40% load) once per quarter per engine • *Blackout Test* (approx. 4 hours at maximum potential-load) once per year, typically in the spring) The following monthly testing protocol for the entire site is typical, including the existing facility at 128 First Ave. and the proposed facility at 105 Cabot St.: • Weekend 1 – First Ave.: 3 engines are tested on Saturday and 3 engines are tested on Sunday • Weekend 2 – First Ave.: 3 engines are tested on Saturday and 3 engines are tested on Sunday • Weekend 3 – First Ave.: 3 engines are tested on Saturday and ▪ Cabot St.: 3 engines (2- 2000 ekW and 1- 500 ekW) are tested on Sunday • Weekend 4 – Cabot St.: 3 engines are tested on Saturday and 3 engines are tested on Sunday.
	3. The emission rates for the subject engine/generator sets shall not exceed the emission limitations contained in Table 2 above at any firing rate. The ability of the equipment to maintain emission rates at or below the required levels must be demonstrated when and if, in the opinion of the Department, such is deemed necessary.

Table 6 Key:

EU = Emission Unit Number
CO = Carbon Monoxide
PM = Total Particulate Matter
$PM_{2.5}$ = Particulate Matter less than or equal to 2.5 microns in diameter
PM_{10} = Particulate Matter less than or equal to 10 microns in diameter
HAP (single) = maximum single Hazardous Air Pollutant
HAP (total) = total Hazardous Air Pollutants
NO_x = Nitrogen Oxides
SO_2 = Sulfur Dioxide
VOC = Volatile Organic Compounds

B. Noise/Sound Control

The Permittee shall install, implement and use the following sound attenuating technologies/strategies for EU 2Gen1 through EU 2Gen8 and chillers:

1. Chillers
   a. Rooftop acoustical barrier (solid screen wall, insulated if necessary)
   b. Acoustical compressor wraps for tonal control

2. Generators
   a. Super hospital grade mufflers;
   b. Radiator exhaust air attenuation;
   c. Interior reverberation mitigation utilizing sound absorbing treatment;
   d. Intake air attenuation with the installation of 24 inch deep sound attenuating devices.

EU 2Gen9 shall be equipped with a sound attenuating enclosure. The EU shall be equipped with a super critical grade muffler and the air intake louvers will be equipped with a deep sound attenuating device.

C. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as “shanty caps” and “egg beaters.”

D. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

Table 7

EU	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions (feet)	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (^{o}F)
1GenA	75	1.66	33.6 – 100.9	539.7 -785.0
1GenB	75	1.66	33.6 – 100.9	539.7 -785.0
1GenC	75	1.66	33.6 – 100.9	539.7 -785.0
1GenD	75	1.66	33.6 – 100.9	539.7 -785.0
1GenE	75	1.66	33.6 – 100.9	539.7 -785.0
1GenF	75	1.66	33.6 – 100.9	539.7 -785.0
1GenG	75	1.66	33.6 – 100.9	539.7 -785.0
1GenH	75	1.66	33.6 – 100.9	539.7 -785.0
1GenI	75	1.54	34.2 -111.0	546.8 - 767.5
1GenJ	75	1.33	53.7 - 154.0	552.8 - 684.6
1GenK	75	1.33	53.7 - 154.0	552.8 - 684.6
1GenL	75	1.33	53.7 - 154.0	552.8 - 684.6
1GenM	75	1.33	53.7 - 154.0	552.8 - 684.6
1GenN	75	1.33	53.7 - 154.0	552.8 - 684.6
1GenO	75	1.33	53.7 - 154.0	552.8 - 684.6
2Gen1	76	1.17	71.0 – 237.51	554.4 – 769.6
2Gen2	76	1.17	71.0 – 237.51	554.4 – 769.6
2Gen3	76	1.17	71.0 – 237.51	554.4 – 769.6
2Gen4	76	1.17	71.0 – 237.51	554.4 – 769.6
2Gen5	76	1.17	71.0 – 237.51	554.4 – 769.6
2Gen6	76	1.17	71.0 – 237.51	554.4 – 769.6
2Gen7	76	1.17	71.0 – 237.51	554.4 – 769.6
2Gen8	76	1.17	71.0 – 237.51	554.4 – 769.6
2Gen9	20.6	0.50	326.12	940.5

Table 7 Key:

EU = Emission Unit Number

^{o}F = Degree Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.

H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.

I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between

provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Edward J. Braczyk by telephone at 978-694-3289, or in writing at the letterhead address.

Edward J. Braczyk
Environmental Engineer

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

Susan P. Ruch
Acting Permit Chief and Deputy Regional Director, Bureau of Air and Waste

Enclosure

cc: Needham Health Department, 1471 Highland Ave., Needham, MA 02492
Needham Fire Department, 88 Chestnut St., Needham, MA 02492
Elizabeth Hendrick, Tetra Tech, 2 Lan Drive, Suite 210, Westford, MA 01886
Kevin Drinan, ATC Group Services, LLC, 500 West Cummings Park, Suite 3750, Woburn, MA 01801-6350
ecc: MassDEP-NERO: Mary Persky, Martha Bolis, Edward Braczyk
MassDEP/Boston - Yi Tian